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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/140,862	08/27/98	ALBERT J	INK-006

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EXAMINER
LEWIS, D

ART UNIT	PAPER NUMBER
2673	17

DATE MAILED: 04/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/140,862

Applicant(s)
Albert et al.

Examiner
David L Lewis

Group Art Unit
2673



☒ Responsive to communication(s) filed on Jan 29, 2001

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-10 is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-10 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Title: Color Electrophoretic Displays

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 2, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota (3756693) in view of Naoyuki (JP 401086111A)**
3. **As in claims 1 and 6, Ota teaches of an electrophoretic display, figure 3, comprising: a substrate, column 2 lines 20-30, a suspending fluid and at least two particle, column 4 lines 54-67; at least two electrodes disposed adjacent the particles, said at least two electrodes disposed between said substrate and said particles, wherein application of a voltage potential to one of said at least two electrodes causes said particles to migrate within the suspending fluid, causing said capsule to change its visual state, column 1 lines 15-50, column 2 lines 55-67, wherein the two particles have different mobilities, column 5 lines 1-16, column 7 lines 50-68, and further wherein a broadly interpreted the volume of an electrophoretic dispersion is encapsulated in between housing walls 4 and 5 to form at least one capsule. However Ota is silent as to the display particles being within a capsule, the type**

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that may be considered in plurality. Modifying the display as taught by Ota to include capsulized particles is well known and would be obvious to the skilled artisan. **Naoyuki teaches of** an encapsulated, **see abstract**, wherein the migrating particles are prevented from aggregating or adhering to the electrodes when the electric field is applied, suppressing the formation of display defects. Naoyuki takes a well known electrophoretic system and particle dispersion, and microencapsulate the particle dispersion to improve display quality of electrophoretic display particles in a binder for the purpose of improving the display. Wherein the sticking of the particles to the display electrodes is eliminated and a uniform and stable display operation is the result. Therefore it would have been obvious to the skilled artisan at the time of the invention to modify the display as taught by Ota to include capsulized particles as taught by Naoyuki for the purpose of eliminating sticking of the particles and creating a uniform and stable display, as suggested by Naoyuki. **As in claim 2**, Ota (693) teaches where the particle mobilities are non-overlapping, column 5 lines 1-16, column 7 lines 50-68, wherein different mobilities of opposite polarities are non-overlapping.

4. **Claims 3-5, and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota (3756693) in view of Naoyuki (JP 401086111A) and Ota et al. (3870517).**
5. **As in claim 3**, Ota (693) in view of Naoyuki teaches of the invention as applied to claim 1 above. Further, Ota et al. (517) demonstrates how the two particles can be three in number and of varying colors, column 2 lines 55-68, and since the particles can act as the primary image colorant the skilled artisan could obviously choose red, blue, and green as the particle colors well known as the prime colors in a colored spectrum display system. **As in claims 4 and 7**, Ota (517) teaches of a suspending fluid being transparent, column 4 lines 15-22, wherein colorless obviously implies transparent, column 1 lines 20-25. **As in claim 5**, Ota (517) teaches of the suspending medium being dyed, column 7 lines 15-25. **As in claim 8**, Ota (693) teaches of a color coated transparent electrode, column 8 lines 10-20,

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and a colored particle of optical reflective color and/or luminescent property, column 4 lines 54-67, wherein depending on the background/foreground color scheme desired the particle would obviously be the have the same optical property as the electrode to hide the particles in a non-display voltage state, column 5 lines 16-37. **As in claim 9**, Ota (517) teaches of the at least one particle being white, column 7 lines 17-30, wherein the colorless suspending fluid can obviously be made white by a white particle used as a dye means to achieved the desired color, figure 3a item 15..

6. **As in claim 10**, Ota (693) in view of Naoyuki teaches of the invention as applied to claims 1-9 above, including the particle capsulized multicolored electrophoretic display, whose particles have different mobilities according to the voltage bias on the colored coated electrodes. Further, Ota (517) teaches of particles of the various colors, including cyan, magenta, yellow, and white, while also teaching of colored electrodes used to hide the particles in a particular voltage-bias display state, column 9 lines 1-37. While Ota is silent as to as to explicitly teaching of red, blue, and green, particles, such a particle color variation would have been obvious to the skilled artisan, in view of those colors representing the well known prime colors a the color spectrum used in most display systems. As shown in figure 3a, a white particle, 15, and three colored particles, 6a-c, in conjunction with electrodes 8 and 9, are used to produce display color combinations. Therefore it would have been obvious to the skilled artisan to encapsulate the electrophoretic display system as taught by Ota (693 and 517) in the method as suggested by Naoyuki to promote non-sticking and uniformity of the display, and further varying the particle color scheme as an obvious design choice, for the purpose of presenting a color display, as found in claim 10 and obviously suggested by Ota..

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Response to Arguments

7. Applicant's arguments filed 1/29/01 have been fully considered but they are not persuasive. Naoyuki teaches the elements missing from Ota wherein the Naoyuki suggests microencapsulating display particles of a display well known in the art as taught by Ota. The applicant argues Naoyuki et al. fails to teach how to encapsulate the particles in such a display as taught by Ota, however this point is irrelevant given the fact that the claims are not drawn to a process method for making or encapsulating particles of a display, they are merely drawn to a display apparatus. The applicant argues a moot point. Naoyuki's suggestion for encapsulating a display of the type as taught by Ota is sufficient basis for the rejection. Further while not utilized for the previous rejection the Examiner notes the reference Saxe et al., teaches of the invention as found in claim 6, column 3 lines 20-25, column 7 lines 55-63, wherein a microencapsulated suspension comprising migrating particles is taught, and further Saxe et al. suggests how to encapsulate particles as well know, further wherein the variation of claim 1 would have been obvious to the skilled artisan given the teaching of Saxe. Applicant argues Naoyuki fails to teaches of a suspending fluid, however given the particles of Ota traverse within a suspending medium, it would likewise be obvious that having encapsulated the particles for the reasons as stated by Naoyuki, the particles would still require a suspending medium to traverse in response to voltage potentials applied to the display electrodes. Further the use of particles of varying colors is an obvious design choice and would have been obvious to the skilled artisan for the purpose of providing a color display, wherein a variety of color electrode and particle color schemes can be chosen.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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Art Unit: 2673
Applicant: Albert et al.

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is (703) 306-3026. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

BOX AF

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 308-9051, (for formal communications; please mark "EXPEDITED PROCEDURE")

Or:

(703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Or hand-delivered to:

Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



**BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**

Examiner: David L. Lewis

April 9, 2001